

I am not aware to what extent, if any, crested forms of the Lady Fern are represented in the various herbaria and fern gardens. However, in the light of Dr. Butters' conclusion, it is improbable that this particular form has ever been given its proper name. I therefore wish to suggest that it be called

ATHYRIUM ANGUSTUM var. **cristatum** var. nov.

It is at once readily distinguished from the type and all other varieties by the crested pinnae and apex. The numerous (2 to 10) subdivisions of the pinnae are often again crested, giving the pinnae a plume-like appearance. The apex of many fronds bears such numerous crests that they are almost rosette-like in appearance. All of this is lost however in preparing specimens for the herbarium.

Fruiting fronds have been produced freely but the spores have not been tested to determine their fertility.

If by chance this form has been properly named elsewhere, the present notes will at least serve to call attention to what is likely to become known as the most beautiful form of this popular species.

Quite a number of herbarium specimens have been prepared and will be given to those who care to send postage.

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Commercial Fern Gathering

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Mr. Frank B. Tucker has published in *American Forestry*¹ an article on "Gathering the Spinulose Shield Fern," the picking of the fronds of which paid for his

¹ *Am. Forestry* 25: 1226-2128, illus. July, 1919.

vacation in Vermont several years ago. The name of the hamlet where he stopped is not given, but "it is delightfully situated in a dilation of a valley of a branch of the Deerfield River, some nineteen hundred feet above sea level, with encircling summits rising another ten hundred feet."

"About ten years ago, a shrewd-eyed native of the locality saw a fortune in the perennial crop of the spinulose shield fern" that grew in the moist woods abundantly, conceived the idea of marketing the fronds and now has become an acknowledged "benefactor of the community." Ordinarily, "picking begins about two weeks before Labor Day and lasts about five weeks." "During the height of the picking season some families earn as much as ninety dollars a week, clearing some five hundred dollars during the season." The men gather the ferns from early morning until late at night in large hampers which are brought in several times during the day to their women for bunching. The ferns are bound, in bunches of twenty-five, by a piece of thread, each bunch containing an assortment of sizes varying from about nine inches to eighteen inches. Some men bunch their ferns as they pick; however, most of the bunching is done by women or at night.

Some difficulty is experienced at the beginning, it is said, to distinguish the spinulose shield fern from other ferns growing with it, but a novice soon becomes proficient. An "expert gauges the size and quality of the ferns almost by the feeling of their stalks; and, instead of gathering them one at a time, his busy fingers take, in one operation, all those of the cluster that are of proper size. The ferns are not pulled up by the roots, but are broken off a few inches below the lowest frond." The dealer and his agents to whom the ferns are delivered ship these bunched ferns as far west as Chicago and Denver, and the wastage from being kept in cold

storage is often very great. It is stated that from this hamlet 90,000,000 fern fronds were picked in one year.

One's first thought, after reading this article, is that the spinulose shield fern, presumably *Dryopteris intermedia* (Muhl.) Gray, is doomed in the localities where it is so prodigiously picked. However, from what one can glean from the facts stated, the industry continues year after year with no apparent or appreciable exhaustion of the fern. This is without doubt due to the fact that the fronds are picked or broken off so that the rootstocks are uninjured, although one might suspect that yearly picking of the fronds would eventually weaken the vitality of the plants to a marked degree. Might not this be true with the half-evergreen spinulose shield fern?

Mr. W. N. Clute has copied² from the *American Botanist*, December, 1903, an article, "Destroying the Ferns." It relates largely to an attempt to pass a measure in the Massachusetts Legislature early in 1903, requiring that each commercial fern gatherer in the Berkshires and that State be required to have a license for fern picking, and to make other laws restricting the collecting. It is there stated, "not more than \$50,000 worth of ferns are harvested in Berkshire every year," and "it is estimated that more than 100,000,000 ferns are gathered each year and put in cold storage at Springfield to be sent broadcast over the country." Undoubtedly this bill was killed in the Legislature, as a stiff fight was to be waged to defeat it. Prof. Clute ends the article by saying: "It is a mistake to think that removing the fronds, even in autumn, does no harm to the plants. Gathering the fronds late in the year injures the plants less than at other seasons, but it may be safely assumed that so long as the fronds are

² Fern Bulletin 12: 55-57. April, 1904.

green the plant has use for them. . . . Any person willing to exterminate our ferns at \$2.50 a wagon-load ought to be converted."

Mrs. Orra Parker Phelps writes³ from Salisbury, Connecticut, of seeing large bales of ferns waiting for shipment at a little country station. "The ferns were *Aspidium marginale*, *A. spinulosum* and its varieties, and *Polystichum acrostichoides*. On none of the fronds did the spores seem to be ripe and some of the fronds were still so young that the tips were not fully developed." She asks, "How long does it take a fern to come from the spore to maturity? Surely no less than six years, probably much longer. But suppose the fronds were carefully collected, what of the scattering of spores for the production of new ferns?" Mrs. Phelps also speaks of the fact that "in the year 1869, the Connecticut legislature passed an act prohibiting the gathering of the climbing fern, *Lygodium palmatum*. Prior to that time, this beautiful fern had been extensively collected and sold for decorative purposes"; but since the passing of the act it has recovered from its threatened extinction in the regions where it grows.

Mr. Harold Goddard Rugg speaks⁴ of the collecting of *Polystichum acrostichoides*, known to the collectors as the "dagger" fern, at Cavendish, Vermont, where "in one year three hundred and twenty-five thousand fronds were shipped to a Boston florist. This one florist, in the course of a year, uses one million fern fronds and one thousand pounds of ground pine or *Lycopodium* of various varieties." Mr. Rugg speaks of the collecting of *Dryopteris intermedia*, known as "fancy" or "lace" fern, in southern Vermont, where collectors have picked the fern in some localities for twenty-five

³ A Plea for Fern Protection. Am. Fern Journal 2: 22-23. Jan., 1912.

⁴ Fern Protection Needed. Am. Fern Journal 3: 93-94. July-Sept., 1913.

years; and states that the pickers say "they can see no diminution in the quantity or even the quality of the plants." Mr. Rugg raises the question: "Does this collecting of fronds injure the plants themselves and in time kill them? As yet I have been unable to answer this question in a satisfactory way. It is true, doubtless, that careless pickers are apt to disturb the roots, which may become exposed to the dry surface air. In time this exposure may cause the death of the plant." It is further stated that ferns "are in more or less danger, from the many nurserymen who are now dealing in our hardy plants" and who "buy their plants directly from the collectors who despoil our woods of roots."

A reprinted newspaper clipping⁵ states that "more than \$30,000 has been paid out in the months of September, October and the first part of November to gatherers of wild ferns in the four Bennington County towns of Woodford, Stamford, Searsburg and Readsboro. The pickers were paid by the piece, four cents a hundred, and as there have been more than 6,000,000 ferns shipped out of the mountains this season, the sum total is easily reached." The hamlet Frank B. Tucker refers to is evidently one of these villages or in that vicinity. The clipping, as does Mr. Tucker in his article, speaks of lumber companies and individual property owners of "the mountain land on which the ferns are gathered" leasing "the picking privileges, instead of permitting free access to the property, as was formerly the case."

Mr. E. J. Winslow quotes⁶ from an article by F. E. Robertson in *The Vermonter* for October, 1915, regarding the fern picking industry "in the towns of Woodford, Searsburg, Stamford and Readsboro," where "over

⁵ \$30,000 Paid Fern Pickers. *Am. Fern Journal* 4: 28-29. Jan.-March, 1914.

⁶ Carloads of Ferns. *Am. Fern Journal* 6: 19-20. Jan.-March, 1916.

50,000,000 ferns are gathered annually. These have a local value of something over \$20,000. . . . A good picker will gather 10,000 to 12,000 ferns daily." It is stated: "Over 50 carloads of ferns have been sent this season from Bennington County to refrigerator headquarters in Pittsfield, Mass. Two carloads are sent from Bennington village each day." Mr. Winslow was not prepared to say whether the collecting of the fronds of ferns would seriously injure the plants, if it was done in the latter part of summer, and if proper care was used for separating the fronds from the crown; and asks that some Vermont reader in position to observe the methods and conditions under which this industry is being carried on report to the JOURNAL.

This review of the available evidence seems to show that the ferns which are used commercially are bearing up well under the strain of annual pickings. This is indeed encouraging, both from the point of view of the fern-lover and that of the industry. But it may be partly due to the abundance of the species in question and to the chance that the same plant may not lose all its fronds every year, even with pretty thorough picking. It is to be hoped that some one with the opportunity to do so will take kindly to Mr. Winslow's suggestion and make accurate observations of the real effect of commercial picking.

HUDSON FALLS, N. Y.

MONOMORPHISM IN *EQUISETUM TELMATEIA* EHRH.— This typically dimorphic species, which is the most abundant representative of the genus in Western Oregon, occasionally shows a tendency toward monomorphism, possibly indicating a reversion to a primitive type in which fertile spikes were borne on branching green stems. Ordinarily the pale-brown unbranched